

Geoffrey St Leger

10083075-2

12

Access DB#

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Gwen Liang Examiner #: 79180 Date: 3-17-05
Art Unit: 2162 Phone Number 301-24038 Serial Number: 10/083,025
Mail Box and Bldg/Room Location: RND 3B 11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Improved Application Portability and Extensibility Through Database Schema and Query Abstraction
Inventors (please provide full names):

DETTINGER, Richard D; Johnson, Peter J; STEVENS, Richard J; TONG, Ikhua; WILL, Eric

Earliest Priority Filing Date: 2-26-02 *Assignee: IBM

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Concept = A method to map logical fields to physical fields in the database, so the user only has to deal with logical (customized) fields and let the query tool to build an abstract query based on the logical fields and transform the abstract query into a query consistent with the particular physical data presentation.

pages (CON-1 = Concept)

(CON-2~3 = problems to be resolved)

(CON-4 = support for claim 27-1-4, 27-1-5)

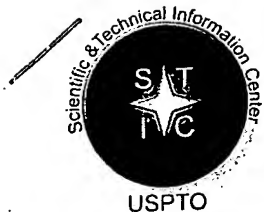
Claims = main claim 27 (focus on 27-1-4, 27-1-5)
(support CON-4)

dependant claims (to focus) (29) (see DRW 2B)

(30) (see DRW 2B)

(31) (see DRW 2A)

*good reference used: US 5,734,887



STIC Search Report

EIC 2100

STIC Database Tracking Number: 148103

TO: Gwen Liang
Location: RND 3B11
Art Unit : 2162
Thursday, April 21, 2005

Case Serial Number: 10/083075

From: Geoffrey St. Leger
Location: EIC 2100
Randolph-4B31
Phone: 23450

geoffrey.stleger@uspto.gov

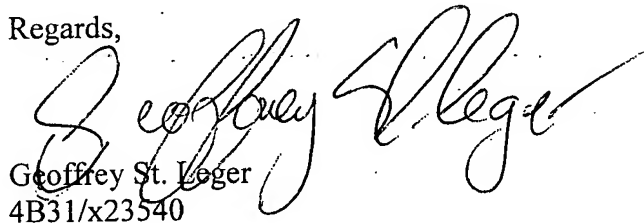
Search Notes

Dear Examiner Liang,

Attached please find the results of your search request for application 10/083075. I searched Dialog's patent files along with the Internet.

Please let me know if you have any questions.

Regards,



Geoffrey St. Leger
4B31/x23540

File 347:JAPIO Nov 1976-2004/Dec(Updated 050405)
(c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200525
(c) 2005 Thomson Derwent

Set	Items	Description
S1	130639	(ACCESS??? OR RETRIEV??? OR ACQUIR??? OR ACQUISITION) (5N) (-TYPE? ? OR KINDS OR METHOD? ? OR METHODOLOG??? OR STRATEG??? -OR MEANS OR TECHNIQUE? ? OR APPROACH OR APPROACHES OR PROCEDURE? ? OR STYLE? ? OR SYSTEM? ? OR RULE? ?)
S2	188389	DATABASE? ? OR DATA() (BASE OR BASES) OR REPOSITOR??? OR (DATA OR INFORMATION) ()MANAG? OR DATA()WAREHOUSE OR LIBRAR??? OR ARCHIVE? ? OR DIRECTORY OR DIRECTORIES
S3	1468712	FIELD? ? OR ATTRIBUTE? ? OR PROPERTY OR PROPERTIES OR TUPLE? ?
S4	26733	S3(5N) (MAP???? OR CORRELAT??? OR CORRESPOND? OR ASSOCIAT??? OR REFER??? OR REFERENC???)
S5	892	SEARCH() (EXPRESSION? ? OR STATEMENT? ? OR PHRASE? ? OR STRING? ? OR INSTRUCTION? ? OR COMMAND? ? OR OPERATOR? ?)
S6	779	(ABSTRACT OR GENERIC? OR GENERAL OR UNSPECIF? OR NONSPECIFIC? OR (UN OR "NOT" OR NON) ()SPECIF? OR UNIVERSAL) (5N) (QUERY -OR QUERIES OR REQUEST? ? OR SYNTAX OR S5)
S7	29588	S3(7N) (FILTER??? OR REMOV??? OR RESTRICT??? OR CONFIN??? OR PURG??? OR COMPRESS??? OR PARE? ? OR PARING)
S8	79234	S3(10N) (SUBSET? ? OR SUB()SET? ? OR PORTION? ? OR PART OR -PARTS OR PIECE? ?)
S9	19443	S3(10N) (COMPOSE? ? OR COMPOSING OR CALCULAT? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING OR COMPUTATION)
S10	1991	S1 AND S2 AND S3
S11	400	S1 AND S2 AND S4
S12	6	S11 AND S6
S13	34	S1 AND S2 AND S6
S14	28	S13 NOT S12
S15	17	S14 AND AC=US/PR
S16	16	S15 AND AY=(1970:2002)/PR
S17	20	S14 AND PY=1970:2002
S18	25	S16:S17
S19	223	S1 AND S2 AND S7:S8
S20	78	S1 AND S2 AND S9
S21	15	S19 AND S20
S22	35758	(ACCESS??? OR RETRIEV???) (3N) (TYPE? ? OR KINDS OR METHOD? ? OR METHODOLOG??? OR STRATEG??? OR TECHNIQUE? ? OR APPROACH OR APPROACHES OR PROCEDURE? ? OR STYLE? ? OR RULE? ?)
S23	90	S22 AND S2 AND S7:S8
S24	36	S22 AND S2 AND S9
S25	26	S24 NOT (S12 OR S21)
S26	2160	(ACCESS??? OR RETRIEV???) (3N) (TYPES OR KINDS OR METHODS OR METHODOLOGIES OR STRATEGIES OR TECHNIQUES OR APPROACHES OR PROCEDURES OR STYLES OR RULES)
S27	8	S26 AND S2 AND S7:S8
S28	1	S26 AND S2 AND S9
S29	9	S27:S28
S30	72	S26 AND S2 AND S3
S31	62	S30 NOT (S12 OR S21 OR S25 OR S29)
S32	36	S31 AND AC=US/PR
S33	32	S32 AND AY=(1970:2002)/PR
S34	41	S31 AND PY=1970:2002
S35	53	S33:S34

File 348:EUROPEAN PATENTS 1978-2005/Apr w02

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File 349:PCT FULLTEXT 1979-2005/UB=20050414,UT=20050407

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Set	Items	Description
S1	18775	(ACCESS??? OR RETRIEV???) (3N) (TYPES OR KINDS OR METHODS OR METHODOLOGIES OR STRATEGIES OR TECHNIQUES OR APPROACHES OR PROCEDURES OR STYLES OR RULES)
S2	198746	DATABASE? ? OR DATA() (BASE OR BASES) OR REPOSITOR??? OR (DATA OR INFORMATION) () MANAG? OR DATA() WAREHOUSE OR LIBRAR??? OR ARCHIVE? ? OR DIRECTORY OR DIRECTORIES
S3	1085904	FIELD? ? OR ATTRIBUTE? ? OR PROPERTY OR PROPERTIES OR TUPLE? ?
S4	116166	S3(5N) (MAP???? OR CORRELAT??? OR CORRESPOND? OR ASSOCIAT??? OR REFER??? OR REFERENC???)
S5	1391	SEARCH() (EXPRESSION? ? OR STATEMENT? ? OR PHRASE? ? OR STRING? ? OR INSTRUCTION? ? OR COMMAND? ? OR OPERATOR? ?)
S6	4376	(ABSTRACT OR GENERIC OR GENERAL OR UNSPECIF??? OR NONSPECIFIC??? OR (UN OR "NOT" OR NON) () SPECIF??? OR UNIVERSAL) (5N) (-QUERY OR QUERIES OR REQUEST? ? OR SYNTAX OR S5)
S7	52548	S3(7N) (FILTER??? OR REMOV??? OR RESTRICT??? OR CONFIN??? OR PURG??? OR COMPRESS??? OR PARE? ? OR PARING)
S8	87793	S3(10N) (SUBSET? ? OR SUB() SET? ? OR PORTION? ? OR PART OR PARTS OR PIECE? ?)
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S10	175	S1(50N) S2(50N) S4
S11	16	S1(50N) S2(50N) S4(50N) S6
S12	82	S1(50N) S2(50N) S7:S8
S13	75	S12 AND AC=US/PR
S14	65	S13 AND AY=(1970:2002)/PR
S15	56	S12 AND PY=1970:2002
S16	69	S14:S15
S17	30	S1(50N) S2(50N) S9
S18	27	S17 AND AC=US/PR
S19	22	S18 AND AY=(1970:2002)/PR
S20	20	S17 AND PY=1970:2002
S21	25	S19:S20
S22	5334	(ACCESS??? OR RETRIEV???) () (TYPES OR KINDS OR METHODS OR METHODOLOGIES OR STRATEGIES OR TECHNIQUES OR APPROACHES OR PROCEDURES OR STYLES OR RULES)
S23	54	S22(50N) S2(50N) S4
S24	37	S23 NOT S11:S12
S25	32	S24 AND AC=US/PR
S26	31	S25 AND AY=(1970:2002)/PR
S27	28	S24 AND PY=1970:2002
S28	33	S26:S27
S29	19	S22(50N) S2(50N) S6
S30	174	S22(30N) S2(30N) S3
S31	83	S22(30N) S2(30N) FIELD? ?
S32	56	S31 NOT (S11:S12 OR S21 OR S28:S29)
S33	38	S32 AND AC=US/PR
S34	35	S33 AND AY=(1970:2002)/PR
S35	40	S32 AND PY=1970:2002
S36	46	S34:S35
S37	8	FILTERED() ACCESS() METHOD? ?
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S40	20	S2(50N) S39
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TE OR COMPUTES OR COMPUTED OR COMPUTING OR COMPUTATION)
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S46 263 FIELD? ?(10N)(COMPOSE? ? OR COMPOSING OR CALCULAT? OR COMP-
UTE OR COMPUTES OR COMPUTED OR COMPUTING OR COMPUTATION)(10N)-
EXPRESSION? ?
S47 18 S2(50N)S46



US005752027A

United States Patent [19]**Familiar**[11] **Patent Number:** **5,752,027**[45] **Date of Patent:** **May 12, 1998**

[54] **APPARATUS AND PROCESS FOR
CREATING AND ACCESSING A DATABASE
CENTRIC OBJECT**

[75] **Inventor:** Robert F. Familiar, Sudbury, Mass.

[73] **Assignee:** Dun & Bradstreet Software Services,
Inc., Atlanta, Ga.

[21] **Appl. No.:** 347,584

[22] **Filed:** Nov. 30, 1994

[51] **Int. Cl.⁶** G06F 17/30

[52] **U.S. Cl.** 395/614; 395/611; 395/677

[58] **Field of Search** 395/600, 650,
395/611, 614, 677

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,421,015 5/1995 Khoyi et al. 395/650
5,437,027 7/1995 Bannon et al. 395/600

FOREIGN PATENT DOCUMENTS

0 459 683 12/1991 European Pat. Off. .

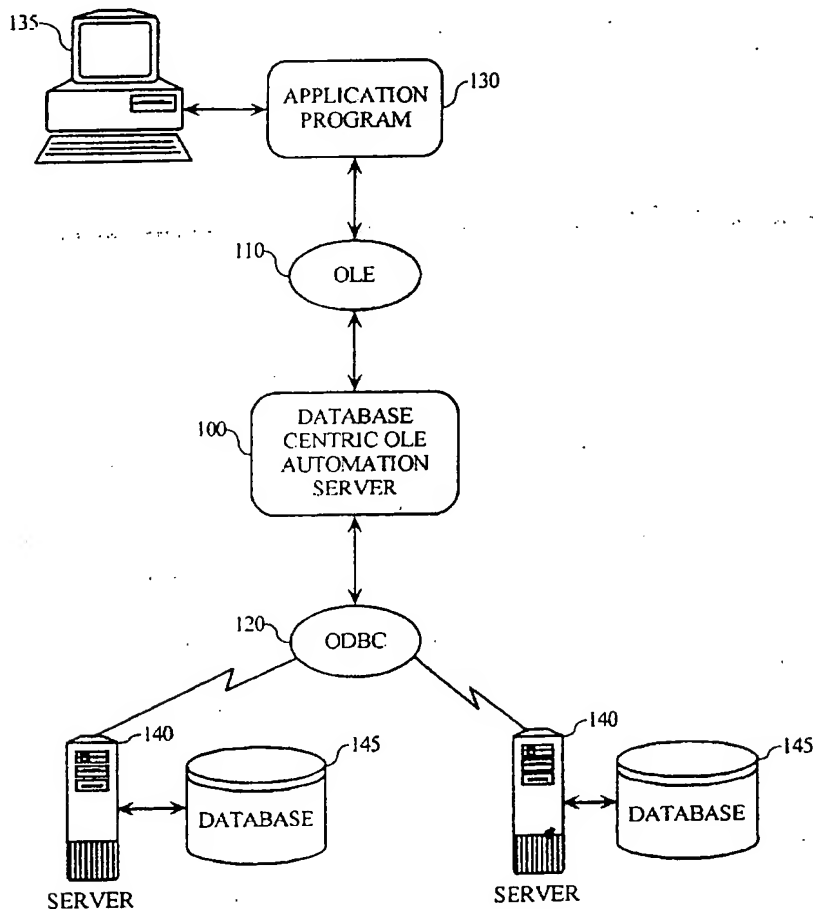
0 474 340 3/1992 European Pat. Off. .

Primary Examiner—Thomas G. Black
Assistant Examiner—Cheryl R. Lewis
Attorney, Agent, or Firm—Troutman Sanders LLP; Joel S. Goldman; Scott M. Frank

[57] **ABSTRACT**

A new computerized object oriented technology is provided. The present invention introduces an apparatus and process for creating an object representative of a set of command interfaces for a database centric item, and an apparatus and process for interfacing the database centric object across a variety of computer applications. In a preferred embodiment, the present invention provides a three category structure to create and access the database centric objects. Each category contains classes which are used to define components (objects) corresponding to the database centric object. The objects further contain methods and properties for accessing the database centric item in response to requests from an application program.

52 Claims, 17 Drawing Sheets



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APPARATUS AND PROCESS FOR CREATING AND ACCESSING A DATABASE CENTRIC OBJECT

BACKGROUND OF THE INVENTION

1. Technical Field

This invention relates generally to computerized object technology and, in particular, to an apparatus and process for creating an object representative of a database and for accessing the object across a variety of application programs.

2. Description of the Prior Art

In recent years application programs and operating systems for computer systems have become much more powerful and efficient. Specifically, users can now utilize computer systems to easily perform tasks that seemed close to impossible or took an extremely long time in the past.

A major reason for these innovations has been the use of "object oriented" technology. Prior art object oriented technology provides a means for items, such as documents, charts, images, vector graphics, voice annotations, video clips, tables and spreadsheets to be represented as objects. By representing these items as objects, users of computer systems have been more easily able to exchange, incorporate and process data among a variety of unrelated computer application programs.

Object oriented technology achieves these results by representing the items as objects with a common set of interfaces. Specifically, in prior art object oriented technology schemes, users need only be concerned with the common interfaces and the data sought to be accessed within the item.

One example of a common set of interfaces using object oriented technology is the Object Linking and Embedding (OLE) interface developed by Microsoft. The OLE interface not only provides a set of interfaces for representing an item as an object, but also provides an object oriented operating system for more efficient handling of the object.

Another aspect of the OLE interface, known as the OLE Automation Server, enables the user to define a set of command interfaces for a "document centric item". A document centric item is an item centered around a document file which is created by a word processor, spreadsheet, or other application program which creates a self-contained document file. The set of command interfaces is stored within an object, which may be accessed across a variety of computer application programs.

For example, a user who uses an application program to develop an item, such as a spreadsheet, can define a set of command interfaces, represent the set as an object and make the item represented by the object accessible to other computer application programs. To illustrate, a user of a word processor application program may easily invoke a command corresponding to one of the set of command interfaces represented by a spreadsheet object and sort a range of cells within the spreadsheet. This may be accomplished with the word processor application program needing only the set of command interfaces to access the spreadsheet data. Further, this may be accomplished without the user having an extensive knowledge of the particular application program used to create the item.

This prior art object oriented technology has led to significant improvements in the efficiency and power of computer systems. As described above, items, such as documents, charts, images, vector graphics, voice

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annotations, video clips, spreadsheets and other self-contained files may be represented as objects. By representing these items as objects, easy access to data within items from a variety of application programs may be achieved. Further, the OLE Automation Server has taken object oriented technology a step further by representing document centric items with a set of command interfaces stored within an object.

Nonetheless, a significant drawback associated with this prior art object oriented technology is that a "database centric items (e.g., a non-self-contained item such as a database, which may include files containing pointers to other associated files within the item) cannot be represented by a set of command interfaces stored within an object. Therefore, with prior art object oriented technology a database centric item cannot be easily accessed across a variety of computer application programs.

The above illustrates just some of the problems associated with the prior art technology. These drawbacks and other shortcomings are effectively overcome by the present invention, as described in further detail below.

SUMMARY OF THE INVENTION

In accordance with the teachings of the present invention, a new computerized object oriented technology is provided. The present invention introduces an apparatus and process for creating an object representative of a set of command interfaces for a database centric item, and an apparatus and process for interfacing the database centric object across a variety of computer applications.

The present invention improves on prior art object oriented technology in that it allows for the creation of a database centric object. Further, the present invention provides a common interface for the object to be accessed across a variety of computer applications. In a preferred embodiment, the present invention provides a three category, five component structure which may be used in conjunction with OLE Automation Server technology to create and access the database centric objects. Each category contains classes which are used to define objects corresponding to the database centric object. The three categories of the structure of the present invention are the Infrastructure category, the Dispatch category and the Database category.

The Infrastructure category contains classes which define objects which initialize/de-initialize the OLE Automation Server and create objects within the Dispatch category. The Dispatch category contains classes which define objects which expose the set of command interfaces (methods and properties) corresponding to the database centric item. Finally, the Database category contains classes which define objects which allow for connectivity and querying of the database centric item.

The Infrastructure category includes an Application class and a ClassFactory class. The Application class defines an object which initializes and de-initializes the OLE Automation Server and creates, maintains and destroys objects defined by classes within the Database category which provide a means for connecting to the database centric item. The ClassFactory class defines an object which includes a method for creating an object defined by an Interface class within the Dispatch category.

The Dispatch category contains the Interface class which defines an object for exposing the set of command interfaces (methods and properties) for accessing the database centric item. Each Interface object may expose one or more command interface from each of the following six categories:

Initialization Properties/Methods, Enumeration Methods, Transaction Methods, Status Methods, Access Properties/Methods and Operation Methods.

The Initialization Properties/Methods provide a means for a user to perform an initial query on the database centric item and perform any other initialization tasks on the database centric item. The Enumeration Methods provide a means for the user to traverse the records of the database centric item. The Transaction Methods provide a means for the user to create, edit and delete the records in the database centric item. The Status Methods provide a means for the user to determine the capabilities of the underlying database centric item, such as whether the records are read only or read/write. The Access Properties/Methods provide a means for the user to access the data of a particular field of a record in the database centric item. Finally, the Operation Methods provide a means for the user to define additional command interfaces for accessing the database centric item.

The Database category includes a Database class and a Recordset class for defining corresponding objects. The Database class defines an object which provides a means for connecting to and opening/closing a database centric item. This object may also be connected to an interface which communicates across a variety of databases, such as those in the following format: dBase, Access, Sybase, Oracle, dBase, and Paradox. One such interface in which the object defined by the Database class may be connected is known as the Open Database Connectivity (ODBC) interface developed by Microsoft.

The Recordset class defines an object which performs an initial query on the database centric item immediately prior to when the object defined by the Interface class exposes the methods and properties in order to access the database centric item. The initial query by the object defined by the Recordset class typically includes an initial join, filter and parameterization of the database centric item.

Accordingly, the present invention improves on prior art object oriented technology, such as the OLE Automation Server, to provide an apparatus and process for creating and accessing an object representative of a set of command interfaces for a database centric item. The aforementioned and other aspects of the present invention are described in the detailed description and attached illustrations which follow.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 depicts a diagram of the present invention implemented in a client/server network.

FIG. 2 depicts the architecture of an Automation Server that contains a database centric object, where the Automation Server is divided into three categories and five components in a preferred embodiment of the present invention.

FIG. 3 depicts methods and properties of an Interface Object, which is a component of a database centric object, in a preferred embodiment of the present invention.

FIG. 4 depicts the relationship between the different components of a database object, as well as their relationship with a database, in a preferred embodiment of the present invention.

FIG. 5 depicts a flow diagram of a preferred embodiment for defining a database and a database centric object in a preferred embodiment of the present invention.

FIG. 6 depicts a flow diagram for creating an object representative of a database in a preferred embodiment of the present invention.

FIG. 7 depicts a flow diagram of an application program calling a method of a database centric using a virtual table of pointers to methods of the object.

FIG. 8 depicts a flow diagram for initializing an object representative of a database in a preferred embodiment of the present invention.

FIG. 9 depicts a flow diagram for traversing the records of a database with methods of an object in a preferred embodiment of the present invention.

FIG. 10 depicts a flow diagram for transacting the records of a database with methods of an object in a preferred embodiment of the present invention.

FIG. 11 depicts a flow diagram for verifying the status of the records of a database with methods of an object in a preferred embodiment of the present invention.

FIG. 12 depicts a flow diagram for obtaining data from the records of a database with methods and properties of an object in a preferred embodiment of the present invention.

FIG. 13 depicts a flow diagram for inputting data into a record of a database with methods and properties of an object in a preferred embodiment of the present invention.

FIG. 14 depicts a flow diagram for accessing a non-top level object representative of a database through a top level object representative of another database in a preferred embodiment of the present invention.

FIG. 15 depicts a Name database table as part of a Phone Book database in an illustrative example of an object representation of the Phone Book database in a preferred embodiment of the present invention.

FIG. 16 depicts a Number database table as part of a Phone Book database table as part of a Phone Book database in an illustrative example of an object representation of the Phone Book database in a preferred embodiment of the present invention.

FIG. 17 depicts a Business Directory database table as part of a Phone Book database in an illustrative example of an object representation of the Phone Book database in a preferred embodiment of the present invention.

FIG. 18 depicts the relationship between several objects and the different components of these objects, as well as their relationship with a Phone Book database, in an illustrative example of an object representation of the Phone Book database in a preferred embodiment of the present invention.

FIG. 19 depicts a computer screen displaying an illustrative example of an interface window implemented with an application program for allowing a user to perform many interfacing tasks with an object representative of a Phone Book database in a preferred embodiment of the present invention.

FIG. 20 depicts a computer screen displaying an illustrative example of an interface window implemented with an application program for allowing a user to input new data into a record of a Phone Book database represented by an object in a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

FIG. 1 illustrates a preferred computer system for use of the present invention. Specifically, the present invention includes a Database Centric OLE Automation Server (Automation Server) 100 interfaced between an object oriented operating system, such as an OLE interface 110, and an interface which communicates with a variety of database 145 types, such as an ODBC interface 120.

In the preferred embodiment, the computer system in which the present invention is implemented is a client/server network. For this embodiment, the OLE interface 110, the Automation Server 100 and the ODBC interface 120 are preferably located at the client 135.

In this embodiment, the OLE interface 110 interacts with application programs 130 at the client 135, also known as the enduser workstation. In one embodiment, the OLE interface may comprise OLE 2.0 available from Microsoft Corp. The client may be an IBM compatible PC or an equivalent running MS-DOS and Microsoft Windows or their equivalent. The application programs 130 may be written in any language which supports prior art OLE Automation Server technology, such as C, C++, Visual Basic, etc.

For the client/server network embodiment, the ODBC interface 120, which is a uniform database interface such as that developed by Microsoft, interacts with a variety of database 145 types stored on one or more server 140. The ODBC interface 120 provides a means for communicating with the different types of databases, such as SyBase, Oracle, Access, DB2, dBase, Paradox, etc. at one time. Of course, as discussed in the Summary of the Invention, the Automation Server 100 may communicate directly with a database, without the ODBC interface 120, when only one type of database is being used.

Set forth below is a description of the computer software for implementing a presently preferred embodiment of the present invention. As one of ordinary skill in the art would readily understand and appreciate, the following is merely one mode for implementing the invention and many equivalent ways exist to achieve the same functions and results of the invention.

Referring to FIG. 2, the Automation Server 100 architecture includes a three category, five component structure, where each category contains at least one component (also referred to herein as an "object"). The three categories are the Infrastructure category 210, the Dispatch category 220, and the Database category 230.

Though one of ordinary skill in the art could readily implement the objects of these categories, Visual C++ available from Microsoft contains a class library of classes which define objects. By using the classes in the class library to define the objects, each of the objects may be created at a later time.

The Infrastructure category 210 contains an Application object 212 and at least one ClassFactory object 215. The Application object 212 initializes/de-initializes the Automation Server 100 with the OLE interface 110, creates the ClassFactory object 215, creates, maintains and destroys some objects in the Database category 230, and requests the ClassFactory object 215 to register itself with the OLE interface 110. The ClassFactory object 215 creates the object of the Dispatch category 220 for exposing the set of command interfaces (methods and properties) corresponding to the database 145.

The Dispatch category 220 contains at least one Interface object 225, which, as described above, stores and exposes the set of command interfaces (methods and properties) for accessing the database 145. As shown in FIG. 3, each Interface object 225 may expose one or more command interface from each of the following categories: Initialization Methods 310, Enumeration Methods 320, Transaction Methods 330, Status Methods 340, Access Properties/Methods 350, and Operation Methods 360.

The Initialization Methods 310 provide a means to perform an initial query on the database 145 and perform any

other initialization tasks on the database 145. Each Interface object 225 exposes Initialization Properties/Methods 310 so that one answer set may be enumerated from the database 145 for each initial query. Each Interface object 225 exposes one Initialization Method 310 and zero or more Initialization Properties 310. Further, the Initialization Method 310 is called prior to calling any other methods of the Interface object 225 so that the other methods will have an answer set to manipulate.

The Enumeration Methods 320 provide a means to traverse the records of the answer set after the database 145 has been initialized. Examples of Enumeration Methods 320 include, but are not limited to: go to the first record, go to the last record, move to the next record, move to the previous record, move to a specific record, skip a set of records, return the number of records, return the current record number, verify positioning at the beginning of a record set and verify positioning at the end of a record set.

The Transaction Methods 330 provide a means to create, edit and delete records in an answer set. Examples of Transaction Methods 330 include, but are not limited to: create a new blank record, delete the current record, save modifications to the current record, requery the answer set, cancel an asynchronous operation, start a transaction, commit the transaction, and roll back the transaction.

The Status Methods 340 provide a means to determine the capabilities of the underlying database 145 in which the answer set has been queried. For example, the Status Methods 340 may determine whether the records are read only, can be added, can be edited and can be deleted. Further, a Status Method 340 may determine whether the database 145 supports transactions.

The Access Properties/Methods 350 provide a means to access data in connection with one or more particular fields of a record in the answer set enumerated by the Initialization Method 310. For example, if an Interface object 225 corresponds to a database 145, containing the "first_name", "last_name", and "mid_initial" fields, then the Interface object 225 may expose a "First Name", "Last Name" and "Middle Initial" properties. Further, in order to obtain and input data in these fields, various methods may be used. The properties, thus, act as a criteria for allowing the methods to obtain or input the data in the "first_name", "last_name" and "mid_initial" fields.

The Operation Methods 360 provide a means to define additional functions in connection with the database 145. For example, a user may wish to define an import and/or export method to transfer data to and from other databases. Nonetheless, though each Interface object has at least one Initialization Method 310, Enumeration Method 320, Transaction Method 330, Status Method 340 and Access Property/Method 350, the Operation Method is optional in a preferred embodiment of the present invention.

Since all Interface objects 225 in the Dispatch category 220 must expose an Enumeration Method 320, Transaction Method 330 and Status Method 340, a preferred embodiment of the present invention centralizes each of these methods in a common Application Programming Interface (API) class called CCommon API. The common API may be stored with other classes written in the same language, such as C++, in a class library. Examples of other classes include an enumeration API for a scrollable database class and an enumeration API for a non-scrollable database class. Both of these enumeration classes are derived from an enumeration API base class. A common API uses one of the two derived enumeration API classes to implement the appropriate inter-

18/5/4 (Item 4 from file: 347)
DIALOG(R) File 347:JAPIO
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03597869

FUZZY RETRIEVING METHOD

PUB. NO.: 03-260769 [JP 3260769 A]
PUBLISHED: November 20, 1991 (19911120)
INVENTOR(s): MATSUSHITA ATSUSHI
YOKOYAMA MITSUO
APPLICANT(s): ESU AARU SOUKEN KK [000000] (A Japanese Company or
Corporation), JP (Japan)
MATSUSHITA ATSUSHI [000000] (An Individual), JP (Japan)
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APPL. NO.: 02-058794 [JP 9058794]
FILED: March 09, 1990 (19900309)
INTL CLASS: [5] G06F-015/40
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications)
JOURNAL: Section: P, Section No. 1314, Vol. 16, No. 68, Pg. 4,
February 19, 1992 (19920219)

ABSTRACT

PURPOSE: To obtain an answer to an ambiguous retrieving request by converting the attribute value included in a data base into a form corresponding to the ambiguous retrieving request by means of the general adaptable degree.

CONSTITUTION: A simple fuzzy attribute, a composite fuzzy attribute, and a relative fuzzy attribute are generated based on the attribute values included in a data base. The adaptable degree is calculated for each attribute with selection of one of several conditions set between an OR and an AND. Then those attributes are combined with each other for calculation of the general adaptable degree, and the retrieving subjects are successively arrayed based on the calculated adaptable degree. Thus an answer is obtained to an ambiguous retrieving request with use of a conventional data base. Then the higher approximation is secured to the human judgement and the higher satisfaction is secured.

18/5/17 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014686192 **Image available**
WPI Acc No: 2002-506896/ 200254
XRPX Acc No: N02-401067

Metadata retrieval method for servers, web browsers, involves determining how data is stored within database, using retrieved metadata and accordingly performs predetermined operation within database

Patent Assignee: NETWORKS ASSOC INC (NETW-N)
Inventor: FORNEY D; HALLMAN C J; VAUGHN L W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6393424	B1	20020521	US 99474601	A	19991229	200254 B

Priority Applications (No Type Date): US 99474601 A 19991229

Patent Details:

Patent No	Kind	Lan	Pg	Main	IPC	Filing	Notes
US 6393424	B1		9	G06F	017/30		

Abstract (Basic): US 6393424 B1

NOVELTY - A metadata object is used to service the request from multiple clients, based on which appropriate metadata are retrieved from a random access memory. The metadata is used to determine how the data is stored within the database, and accordingly predetermined operation is performed within a database.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Computer readable storage medium storing metadata retrieval program; and

(2) Metadata retrieval apparatus.

USE - For retrieving metadata for accessing databases in servers, web browsers, etc.

ADVANTAGE - The metadata object is used to service the requests from multiple clients and thereby client session can share the same data, which can greatly reduce the amount of memory used by client sessions. The metadata retrieved is used to determine how data associated with the request is organized in database, thus generic object is enabled to perform operation on data within database.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart illustrating the process of using metadata.

pp; 9 DwgNo 5/6

Title Terms: RETRIEVAL; METHOD; SERVE; WEB; DETERMINE; DATA; STORAGE;
DATABASE; RETRIEVAL; ACCORD; PERFORMANCE; PREDETERMINED; OPERATE;
DATABASE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

18/5/18 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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013406314 **Image available**
WPI Acc No: 2000-578252/ 200054
Related WPI Acc No: 1999-507577; 2000-505017; 2003-851427
XRPX Acc No: N00-427803

Query execution for retrieving data from database in computer, involves optimizing execution of query, based on received optimization information for execution within massively parallel, shared nothing architecture

Patent Assignee: NCR CORP (NATC)

Patent Assignee: UNIV CENT FLORIDA (UYFL-N)
Inventor: DRISCOLL J R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5893092	A	19990406	US 94350334	A	19941206	199921 B
			US 97880807	A	19970623	

Priority Applications (No Type Date): US 94350334 A 19941206; US 97880807 A 19970623

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5893092	A	26	G06F-017/30	Div ex application US 94350334 Div ex patent US 5642502

Abstract (Basic): US 5893092 A

NOVELTY - The selected text is grouped and are ranked according to relevancy. Based on a manual determination of relevancy, a feed back information is applied to create a different query, automatically to form a second rank list.

DETAILED DESCRIPTION - A sentence, phrase or semantic unit of a text in a document is selected from a database collection by a natural language search query. The second rank list is of a different ranking order. The procedure of ranking the second group is the same as that of the first group.

USE - In personal computers for searching internal files, for modem search systems. Applies to retrieve and filter documents such as patents, legal documents, medical documents, articles, journals as per search request. For answering questions from general information database of public affairs office.

ADVANTAGE - The reading time is minimized and the user is allowed to make relevant decisions very easy by just indicating by a key stroke whether a document is relative or not. The sentences saves the user time by forcing the user to discover small units which are relevant or not relevant and enhances quality of search. There is no size limit for the number of documents to be searched. Relevancy feedback helps the user to automatically identify alternative words useful for expressing a query. Provides an automated retrieval system which minimizes reading efforts of the user and also minimizes the need for highlighting relevant words on a screenful of text.

DESCRIPTION OF DRAWING(S) - The figure is a flow chart for determining the number to indicate the relevance or similarity of a document to a query.

pp; 26 DwgNo 2/15

Title Terms: RANK; METHOD; RETRIEVAL; NATURAL; LANGUAGE; DATA; PERSON; COMPUTER

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

18/5/23 (Item 19 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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010790425 **Image available**

WPI Acc No: 1996-287378/ 199629

XPX Acc No: N96-241183

Providing extensible query architecture for information retrieval system - includes search application that has variety of code module classes, each implementing specific type of query model on data types in database

Patent Assignee: ARCHITEXT SOFTWARE INC (ARCH-N); EXCITE INC (EXCI-N)

Inventor: SPENCER G

Number of Countries: 068 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9618159	A2	19960613	WO 95US16496	A	19951207	199629 B
AU 9646413	A	19960626	AU 9646413	A	19951207	199641
WO 9618159	A3	19960906	WO 95US16496	A	19951207	199645
US 5577241	A	19961119	US 94350967	A	19941207	199701
EP 796470	A1	19970924	EP 95944342	A	19951207	199743
			WO 95US16496	A	19951207	
EP 796470	B1	19990414	EP 95944342	A	19951207	199919
			WO 95US16496	A	19951207	
DE 69509118	E	19990520	DE 609118	A	19951207	199926
			EP 95944342	A	19951207	
			WO 95US16496	A	19951207	
ES 2132769	T3	19990816	EP 95944342	A	19951207	199939

Priority Applications (No Type Date): US 94350967 A 19941207

Cited Patents: Jnl.Ref; No-SR.Pub

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
WO 9618159	A2	E 26	G06F-017/30	
Designated States (National): AL AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TT UA UG UZ VN				
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG				
AU 9646413	A		G06F-017/30	Based on patent WO 9618159
US 5577241	A	14	G06F-017/30	
EP 796470	A1	E	G06F-017/30	Based on patent WO 9618159
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE				
EP 796470	B1	E	G06F-017/30	Based on patent WO 9618159
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE				
DE 69509118	E		G06F-017/30	Based on patent EP 796470
				Based on patent WO 9618159
ES 2132769	T3		G06F-017/30	Based on patent EP 796470
WO 9618159	A3		G06F-017/30	

Abstract (Basic): WO 9618159 A

The system has an extensible query architecture which allows an applications programmer to integrate new query models into the system as desired. The architecture is based on an abstract base class of query nodes, or code objects that retrieve records from the database. Specific sub-classes are derived from the base class. Each query node class includes a search function that iteratively searches the database for matching records. Query node objects are instantiated by associated node creator class objects.

A parser is used to parse a search query into its components, including nested search queries used to combine various query models. The parser determines the particular search operator keywords and the node creator object. The node creator objects return pointers to the created query nodes.

ADVANTAGE - Allows parser to assemble complex hierarchical query nodes that combine multiple query models.

Dwg.1/6

Title Terms: EXTEND; QUERY; ARCHITECTURE; INFORMATION; RETRIEVAL; SYSTEM; SEARCH; APPLY; VARIETY; CODE; MODULE; CLASS; IMPLEMENT; SPECIFIC; TYPE; QUERY; MODEL; DATA; TYPE; DATABASE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

rule holding part 205 so as to generate three-dimensional shape description based on the retrieval result.

29/5/6 (Item 6 from file: 347)
DIALOG(R) File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

05285739 **Image available**
METHOD AND SYSTEM FOR DATABASE MANAGEMENT

PUB. NO.: 08-241239 [JP 8241239 A]
PUBLISHED: September 17, 1996 (19960917)
INVENTOR(s): MORITA KOHAKU
APPLICANT(s): OKI ELECTRIC IND CO LTD [000029] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-066829 [JP 9566829]
FILED: March 01, 1995 (19950301)
INTL CLASS: [6] G06F-012/00; G06F-017/30
JAPIO CLASS: 45.2 (INFORMATION PROCESSING -- Memory Units); 45.4 (INFORMATION PROCESSING -- Computer Applications)

ABSTRACT

PURPOSE: To register objects having similar attributes as elements of a set by comparing attributes of objects with a preliminarily set reference and selecting only objects having the attributes corresponding to this reference.

CONSTITUTION: Objects 1 stored in a set element storage part 2, need not have attributes completely coinciding with one another. Type compatible information 6 is referred to adjust the slight differences. Processing procedures for retrieval 7-1, transposition 7-2, etc., of objects 1 are stored in an operation storage part 7 provided independently of the set element storage part 2. When plural objects 1 are registered as elements of a prescribed set to make a data - base, only objects whose attributes coincide with one another are not registered, but attributes are compared with the preliminarily set reference, and objects having the attributes corresponding to this reference are selected. Consequently, objects which are not equal but similar can be elements of the set. Concretely, objects having practically synonymous attributes are registered.

29/5/7 (Item 1 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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016412232 **Image available**
WPI Acc No: 2004-570144/200455
XRPX Acc No: N04-450910

Object-oriented database command executing method for computer system, involves determining whether to modify database command before executing database command based on which of attributes are referenced

Patent Assignee: ORACLE INT CORP (ORAC-N)

Inventor: KEEFE T; LEI C; WONG D; HUNG WONG D M; LEI C H

Number of Countries: 106 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040139043	A1	20040715	US 2003341797	A	20030113	200455 B
WO 200466128	A2	20040805	WO 2003US41541	A	20031230	200455
AU 2003300422	A1	20040813	AU 2003300422	A	20031230	200479

Priority Applications (No Type Date): US 2003341797 A 20030113

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20040139043	A1	12	G06F-007/00	

35/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

06848483 **Image available**
SYSTEM AND METHOD FOR RETRIEVING DATA BASE

PUB. NO.: 2001-075983 [JP 2001075983 A]
PUBLISHED: March 23, 2001 (20010323)
INVENTOR(s): SUGANUMA AKISHI
APPLICANT(s): FUJI PHOTO FILM CO LTD
APPL. NO.: 11-249438 [JP 99249438]
FILED: September 03, 1999 (19990903)
INTL CLASS: G06F-017/30

ABSTRACT

PROBLEM TO BE SOLVED: To attain retrieval of various kinds of data base .

SOLUTION: Image data are registered on a hard disk 31 and a plurality of attribute tables storing attribute information concerning images are registered on a hard disk 41. When a certain retrieval condition is applied, the attribute information is retrieved while using one attribute table matched to the retrieval condition among attribute tables stored on the hard disk 41. When another retrieval condition is applied, the attribute information is retrieved while using another attribute table stored on the hard disk 41. Even when retrieval conditions are different, the data base retrieval is enabled.

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35/5/4 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

05915585 **Image available**
- DATABASE - SYSTEM-

PUB. NO.: 10-198685 [JP 10198685 A]
PUBLISHED: July 31, 1998 (19980731)
INVENTOR(s): SHIMIZU RIYUUEI
NOMURA TORANOSHIN
UENO MASAYUKI
SAITO MASA
MOTOMURA RISA
NAKAJIMA TAKAHIRO
APPLICANT(s): DAINIPPON PRINTING CO LTD [000289] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 09-001069 [JP 971069]
FILED: January 08, 1997 (19970108)
INTL CLASS: [6] G06F-017/30
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications)

ABSTRACT

PROBLEM TO BE SOLVED: To speedily retrieve prescribed information from huge retrieval objects by providing a retrieving means for storing an attribute added to a logic sentence and retrieving the logic sentence having the attribute when that attribute is inputted.

SOLUTION: When the retrieval of logic sentence is designated (S503), a retrieving method is selected out of three kinds of section retrieval , menu retrieval (company name retrieval) and full sentence retrieval on a pop-up menu (S504). Then, by selecting any desired method, the

correspondent logic sentence is displayed (S508). In this case, when menu retrieval (company name retrieval) is selected (S506), a company name retrieval picture is displayed. Besides, when the full sentence retrieval is designated (S507) and further any retrieval character string (keyword) such as 'strategy', for example, is designated, the correspondent logic sentences are displayed as a list out of all the logic sentences (S508). Thus, the single or plural logic sentences are displayed (S508) and by clicking the desired logic sentence, etc., the whole information is displayed (S509).

35/5/5 (Item 5 from file: 347)
DIALOG(R) File 347:JAPIO
(c) 2005 JPO & JAPIO. All rts. reserv.

05841425 **Image available**
RETRIEVING DEVICE

PUB. NO.: 10-124525 [JP 10124525 A]
PUBLISHED: May 15, 1998 (19980515)
INVENTOR(s): NOMURA HIROYOSHI
APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-281051 [JP 96281051]
FILED: October 23, 1996 (19961023)
INTL CLASS: [6] G06F-017/30
JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a more flexible and efficient retrieving device with which the concept of similarity in similarity retrieval is shown easy to comprehend, the attributes of retrieval conditions are flexibly changed and expanded, the periodicity or the like of a retrieval process is detected and useless retrieval procedures are excluded.

SOLUTION: Stored document data in a data base (DB) part 1 are designated by a document data designating part 4, and an additional keyword is detected by a retrieving person designating document keyword detecting part 6. A similarity retrieval keyword determining part 7 generates this detected keyword, the similarity retrieval keyword of a retrieval history managing part 8 and keyword for similarity retrieval from the history of retrieval, a similar document data retrieval part 10 calculates the degree of matching with document data, a similar document data display position calculating part 12 calculates the display position of document data from this degree of matching, and these data are displayed on a document data display part 3. When the retrieval is repetition having periodicity, a fractal dimension is calculated from the history of retrieved document numbers, periodicity is discriminated and retrieval attributes and conditions are dynamically changed.

35/5/6 (Item 6 from file: 347)
DIALOG(R) File 347:JAPIO
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05299668 **Image available**
METHOD AND STRUCTURE FOR RETRIEVAL MANAGEMENT OF DECENTRALIZED DATABASE ,
AND INTEGRATED MANAGEMENT DATABASE

PUB. NO.: 08-255168 [JP 8255168 A]
PUBLISHED: October 01, 1996 (19961001)
INVENTOR(s): NAITO MASAYUKI
APPLICANT(s): OKI ELECTRIC IND CO LTD [000029] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-059479 [JP 9559479]

Data storage method in database system for electronic data processing, involves assigning unique identity and position properties to specific structure element representing data

Patent Assignee: RESOURCE MANAGEMENT TECH SVENOR AB (RESO-N); SUNDSTROM B (SUND-I); TOLLEFSEN B (TOLL-I)

Inventor: SUNDSTROM B; TOLLEFSEN B; SUNDSTROM B

Number of Countries: 096 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200165407	A1	20010907	WO 2001SE429	A	20010228	200164 B
SE 200000647	A	20010830	SE 2000647	A	20000229	200164
AU 200137859	A	20010912	AU 200137859	A	20010228	200204
SE 517340	C2	20020528	SE 2000647	A	20000229	200239
EP 1259906	A1	20021127	EP 2001910287	A	20010228	200302
			WO 2001SE429	A	20010228	
US 20030126145	A1	20030703	WO 2001SE429	A	20010228	200345
			US 2002220201	A	20020829	

Priority Applications (No Type Date): SE 2000647 A 20000229

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200165407	A1	E	41	G06F-017/30	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
SE 200000647	A			G06F-017/30	
AU 200137859	A			G06F-017/30	Based on patent WO 200165407
SE 517340	C2			G06F-017/30	
EP 1259906	A1	E		G06F-017/30	Based on patent WO 200165407
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030126145	A1			G06F-007/00	

Abstract (Basic): WO 200165407 A1

NOVELTY - A structure element representing data, is assigned with a unique identity (SID) and position properties like parent-concept (OWN), attribute (ATR), attribute value sequencing (SRT) which define the relation of the structure element with other structure elements.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for database system.

USE - For data storage in database system, for electronic data processing.

ADVANTAGE - The method reflects connection, context and meaning, irrespective of data type and complexity of relations between data. Enables simple storage of any type or structure of data based on the fact that structure elements are self-contained carriers of identity and context information. Enables a combination of customized electronic device and standardized software in several layers, to create a common platform for all types of storing and retrieval needs.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of logical relations between element files.

pp; 41 DwgNo 1/1

Title Terms: DATA; STORAGE; METHOD; DATABASE; SYSTEM; ELECTRONIC; DATA; PROCESS; ASSIGN; UNIQUE; IDENTIFY; POSITION; PROPERTIES; SPECIFIC; STRUCTURE; ELEMENT; REPRESENT; DATA

Derwent Class: T01

International Patent Class (Main): G06F-007/00; G06F-017/30

File Segment: EPI

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012813753 **Image available**

WPI Acc No: 1999-619984/ 199953

XRPX Acc No: N99-457264

Request of database server has a common means for accessing different types of database stored on it

Patent Assignee: BULL SA (SELA)

Inventor: RITTER C; SIMON M

Number of Countries: 019 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9949401	A1	19990930	WO 99FR668	A	19990322	199953 B
FR 2776789	A1	19991001	FR 983601	A	19980324	199953
EP 985187	A1	20000315	EP 9909070	A	19990322	200018
			WO 99FR668	A	19990322	

Priority Applications (No Type Date): FR 983601 A 19980324

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9949401	A1	F	29	G06F-017/30	
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Designated States (National): US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU

MC NL PT SE

EP 985187	A1	F		G06F-017/30	Based on patent WO 9949401
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Designated States (Regional): DE FR GB IT

FR 2776789	A1			G06F-017/30	
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Abstract (Basic): WO 9949401 A1

NOVELTY - Server is able to respond to requests in a manner that masks the type of database that is being queried. A number of different databases (SD) are accessed from a single parameter based interface activated by applications and administration modules.

DETAILED DESCRIPTION - A request is modeled in a management information base in the form of a main object comprising the type of data source to be queried, and an attribute of said type and subordinate input or output objects. The input objects each define a parameter and the output objects each define a result variable.

USE - A request server to answer queries or data requests to a number of different types of database stored on it.

ADVANTAGE - Rather than conversion of each request into the code for the necessary application or administration module the requests are converted into a common management information database.

DESCRIPTION OF DRAWING(S) - Figure shows the blocks involved in querying the various databases from the request server.

pp; 29 DwgNo 1/5

Title Terms: REQUEST; DATABASE ; SERVE; COMMON; ACCESS; TYPE; DATABASE ; STORAGE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

International Patent Class (Additional): H04L-012/24

File Segment: EPI

35/5/44 (Item 33 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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011055952 **Image available**

WPI Acc No: 1997-033876/ 199703

XRPX Acc No: N97-028636

Database access system which treats network database file as relational type database file - analyses query in data manipulation language for relational database , generates access modules for accessing hierarchical network database file by adding condition trees